

ABSTRACT

In a memory system, memory devices provide signals indicating when refresh operations are complete. The signals from a number of memory devices can be combined, such as by Oaring, to provide a refresh complete signal to a power management controller. As a result, dynamic factors can affect the refresh operation and the memory may be refreshed without restoring the entire system to a high power state. For example, the time required to perform a refresh operation can be determined dynamically, allowing the system to be returned to a low power state as soon as refresh is complete. Also, ambient temperatures can be monitored to dynamically determine when to perform a refresh operation.